



National Transportation Safety Board Aviation Incident Final Report

Location:	CHICAGO, IL	Incident Number:	CHI93IA110
Date & Time:	03/13/1993, 1627 CST	Registration:	N895US
Aircraft:	FOKKER 100	Aircraft Damage:	Minor
Defining Event:		Injuries:	103 None

Flight Conducted Under: Part 121: Air Carrier - Scheduled

Analysis

DOWN & LOCKED INDICATION OF NOSE GEAR WAS NOT ACHIEVED FOR LANDING. CREW RECYCLED GEAR, USED ALTERNATE GEAR EXTENSION SYSTEM & MADE A FLY-BY. AFTER BEING TOLD GEAR APPEARED TO BE EXTENDED, CREW LANDED, BUT NOSE GEAR COLLAPSED AT END OF LANDING ROLL. RIGHT MAIN OUTBOARD TIRE ALSO BLEW-OUT DURING LANDING DUE TO FROZEN BRAKE. INVESTIGATION REVEALED NOSE- WHEEL WELL WAS SUSCEPTIBLE TO ICE CONTAMINATION. NOSE GEAR DOWN LOCK PLUNGER WAS FROZEN & WOULD NOT EXTEND TO DOWN & LOCKED POSITION. AT DEPARTURE AIRPORT, SLUSH HAD ACCUMULATED ON NOSE GEAR DOWN LOCK & FROZE. USE OF ALTERNATE EXTENSION SYSTEM WOULD HAVE DUMPED THE 500 PSI HYDRAULIC PRESSURE THAT NORMALLY ASSISTED IN HOLDING GEAR IN EXTENDED POSITION. USAIR PROCEDURES STATED THAT TAKEOFF SHOULD NOT BE MADE IF SLUSH OR WET SNOW IN EXCESS OF 1/2 INCH COVERED RUNWAY. AT LEAST 1 INCH OF WET SNOW & SLUSH WAS REPORTED ON DEPARTURE RUNWAY, 22 MINUTES BEFORE DEPARTURE; HOWEVER, ACTING STATION MANAGER DID NOT FOLLOW USAIR PROCEDURES THAT REQUIRED REPORTING THIS TO DISPATCHER & CAPTAIN OF FLIGHT.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this incident to be: FAILURE OF THE COMPANY STATION MANAGER TO FOLLOW PROPER DISPATCH PROCEDURES, AND ICE ACCUMULATION ON THE NOSE GEAR LOCKING MECHANISM. FACTORS RELATED TO THE INCIDENT WERE: WET SNOW (SLUSH) ON THE RUNWAY AT THE DEPARTURE AIRPORT, AND INADEQUATE DESIGN WHICH ALLOWED ICE TO RENDER THE NOSE GEAR DOWNLOCK SYSTEM INOPERATIVE.

Findings

Occurrence #1: NOSE GEAR COLLAPSED

Phase of Operation: LANDING - ROLL

Findings

1. (F) AIRPORT FACILITIES, RUNWAY/LANDING AREA CONDITION - SLUSH COVERED
2. (C) DISPATCH PROCEDURES - NOT FOLLOWED - COMPANY/OPERATOR MANAGEMENT
3. (C) LANDING GEAR, GEAR LOCKING MECHANISM - FROZEN
4. GEAR DOWN AND LOCKED - NOT POSSIBLE - PILOT IN COMMAND
5. (F) ACFT/EQUIP, INADEQUATE DESIGN - MANUFACTURER

Occurrence #2: AIRFRAME/COMPONENT/SYSTEM FAILURE/MALFUNCTION

Phase of Operation: LANDING - ROLL

Findings

6. LANDING GEAR, NORMAL BRAKE SYSTEM - FROZEN
7. LANDING GEAR, TIRE - FAILURE, TOTAL

Factual Information

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	36, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	11/19/1992
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	FOKKER	Registration:	N895US
Model/Series:	100 100	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	11380
Landing Gear Type:	Retractable - Tricycle	Seats:	111
Date/Type of Last Inspection:	03/13/1993, Continuous Airworthiness	Certified Max Gross Wt.:	91500 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:	2293 Hours	Engine Manufacturer:	Rolls-Royce
ELT:	Not installed	Engine Model/Series:	TAY650-15
Registered Owner:	WILMINGTON TRUST COMPANY	Rated Power:	15100 lbs
Operator:	USAIR	Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:	USAIR	Operator Designator Code:	USAA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	ORD, 667 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	1632 CST	Direction from Accident Site:	1°
Lowest Cloud Condition:	Scattered / 3600 ft agl	Visibility	12 Miles
Lowest Ceiling:	None / 0 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	20 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	340°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30 inches Hg	Temperature/Dew Point:	-7° C / -16° C
Precipitation and Obscuration:			
Departure Point:	CHARLOTTE, NC (CLT)	Type of Flight Plan Filed:	IFR
Destination:	(ORD)	Type of Clearance:	IFR
Departure Time:	1422 EST	Type of Airspace:	Class E

Airport Information

Airport:	O'HARE INT'L (ORD)	Runway Surface Type:	Concrete
Airport Elevation:	667 ft	Runway Surface Condition:	Dry
Runway Used:	4R	IFR Approach:	Visual
Runway Length/Width:	8071 ft / 150 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	5 None	Aircraft Damage:	Minor
Passenger Injuries:	98 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	103 None	Latitude, Longitude:	

Administrative Information

Investigator In Charge (IIC):	PAMELA S SULLIVAN	Report Date:	05/10/1994
Additional Participating Persons:	JEFF BARNETT; CHICAGO, IL		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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